

1 What is claimed is:

2 1. A method for making a package substrate comprising the steps of:

3 providing a substrate having a top surface and a bottom surface;

4 forming at least a through slot passing through the top surface and the bottom surface  
5 of the substrate so as to form a plurality of side walls inside the through slot and a  
6 die-cavity portion;

7 forming a metal layer on the top surface of the substrate and the side walls inside the  
8 through slot;

9 forming an anti-etching layer on the top surface of the substrate and the die-cavity  
10 portion for sealing the through slot;

11 patterning the anti-etching layer;

12 etching the metal layer on the top surface of the substrate to form a circuit pattern  
13 under the anti-etching layer, the anti-etching layer preventing the metal layer on the  
14 side walls of the through slot from etched;

15 removing the anti-etching layer; and

16 removing the die-cavity portion of the substrate to form a die-cavity of the substrate  
17 having the metal layer on the side walls.

18 2. The method in accordance with claim 1, wherein the anti-etching layer is a  
19 photosensitive dry film.

20 3. The method in accordance with claim 1, wherein the through slot has a width between  
21 0.1mm and 4.0 mm.

22 4. The method in accordance with claim 1, wherein the metal layer on the side walls is  
23 in discontinuous configuration after the step of removing the die-cavity portion.

24 5. The method in accordance with claim 1, wherein the through slot is a linear slot.

25 6. The method in accordance with claim 1, wherein the through slot is a L-shaped slot.

26 7. The method in accordance with claim 1, further comprising a step of forming an  
27 insulation cover layer on the circuit pattern layer.

- 1 8. The method in accordance with claim 1, further comprising a step of forming a  
2 surface treating layer on the metal layer.
- 3 9. A method for making a package substrate comprising the steps of:  
4 providing a substrate having a top surface and a bottom surface, the top surface  
5 including a die-cavity region;  
6 forming at least a slot around the die-cavity region so as to form a plurality of side  
7 walls inside the slot and a die-cavity portion within the die-cavity region, wherein the  
8 die-cavity portion is integrally connected with the substrate;  
9 forming a metal layer on the top surface of the substrate and the side walls;  
10 forming an anti-etching layer on the top surface of the substrate and the die-cavity  
11 portion for sealing the slot;  
12 patterning the anti-etching layer;  
13 etching the metal layer on the top surface of the substrate, the anti-etching layer  
14 preventing the metal layer on the side walls of the through slot from be etched;  
15 removing the anti-etching layer; and  
16 removing the die-cavity portion of the substrate to form a die-cavity of the substrate  
17 having the metal layer on the side walls.
- 18 10. The method in accordance with claim 9, wherein the anti-etching layer is a  
19 photosensitive dry film.
- 20 11. The method in accordance with claim 9, wherein the slot has a width between 0.1mm  
21 and 4.0 mm.
- 22 12. The method in accordance with claim 9, wherein the metal layer on the side walls is  
23 in discontinuous configuration after the step of removing the die-cavity portion.
- 24 13. The method in accordance with claim 9, wherein the slot is a linear slot.
- 25 14. The method in accordance with claim 9, wherein the slot is a L-shaped slot.
- 26 15. The method in accordance with claim 9, further comprising a step of forming an  
27 insulation cover layer on the circuit pattern layer.

- 1 16. The method in accordance with claim 9, further comprising a step of forming a  
2 surface treating layer on the metal layer.
- 3 17. A method for making a package substrate comprising the steps of:  
4 providing a substrate having a top surface and a bottom surface, the top surface  
5 including a die-cavity region;  
6 firstly routing the substrate to form a plurality of slots around the die-cavity region so  
7 as to form a die-cavity portion integrally connected with the substrate within the  
8 die-cavity region;  
9 forming a metal layer in the slots; and  
10 secondly routing the substrate to connect the slots in a manner that the die-cavity  
11 portion is separated from the substrate.
- 12 18. The method in accordance with claim 17, wherein the slots have a width between  
13 0.1mm and 4.0 mm.
- 14 19. The method in accordance with claim 17, wherein the slots are linear slots.
- 15 20. The method in accordance with claim 17, wherein the slots are L-shaped slots.
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